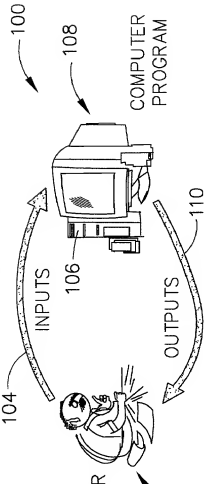
100
108
COMPUTER PROGRAM
106
110
INPUTS
OUTPUTS
104
ENGINEER
102

FIG. 1A

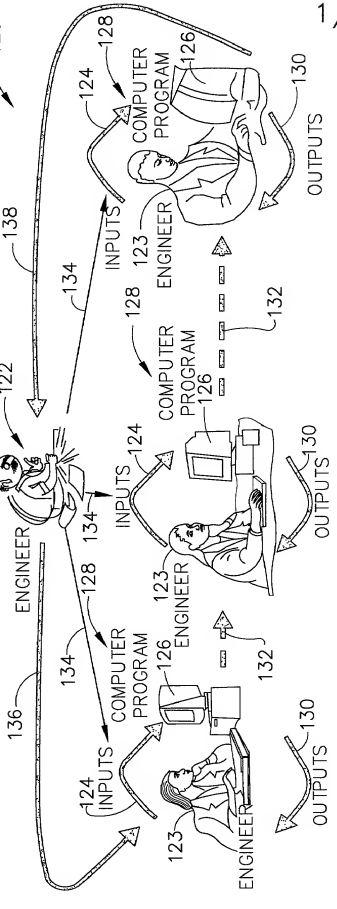
120
128
COMPUTER PROGRAM
126
124
130
OUTPUTS
INPUTS
123
ENGINEER
138
134
132
122
136

FIG. 1B

200
OBJECTIVES
CONSTRAINTS
KNOWLEDGE
205
206
204
INPUTS
208
SIMULATION CODE
210
OUTPUTS
ENGINEER
202

FIG. 2A

220
238
223
OUTPUTS
MODULE K
228
240
232
OUTPUTS
INPUTS
232
OBJECTIVES
CONSTRAINTS
KNOWLEDGE
223
MODULE 2
228
OUTPUTS
INPUTS
232
222
CHIEF
ENGINEER
236
INPUTS
223
MODULE 1
228

FIG. 2B

300
303
INPUT FILE(S)
304
308
SIMULATION CODE
310
311
OUTPUT FILE(S)
305
(OBJECTIVES CONSTRAINTS KNOWLEDGE)
REUSABLE COMPONENT

FIG. 3A

PROBLEM DEFINITION – TASL 1

Detail for Task1 Task:

/Parameters

Inputs | Output | Auxiliaries | Constraints | Selected Group: All

	Parameter	Var.	Obj.	Obj. Scl. Factor	Lower Bound	Current Value	Upper Bound
1	Videal	☑	☐			≤ 615.896	≤ 680.0
2	MaxTime	☐	☐			5000.0	
3	weightBdb	☐	☐			6815.0	
4	MachAlpha [0,0]	☐	☐			0.0	
5	MachAlpha [0,1]	☐	☐			15.0	
6	MachAlpha [0,2]	☐	☐			0.0	
7	MachAlpha [0,3]	☐	☐			15.0	
8	MachAlpha [0,7]	☐	☐			5.0	
9	MachAlpha [0,5]	☐	☐			22.0	
10	MachAlpha [0,6]	☐	☐			7.5	
11	MachAlpha [0,7]	☐	☐			33.0	
12	MachAlpha [0,8]	☐	☐			9.5	
13	MachAlpha [0,9]	☐	☐			40.0	
14	MachAlpha [1,0]	☐	☐			50.0	
15	MachAlpha [1,1]	☐	☐			40.0	
16	MachAlpha [1,2]	☐	☐			43.0	
17	MachAlpha [1,3]	☐	☐			40.0	
18	MachAlpha [1,4]	☐	☐			22.4	
19	MachAlpha [1,5]	☐	☐			40.0	
20	MachAlpha [1,6]	☐	☐			25.0	
21	MachAlpha [1,7]	☐	☐			40.0	
22	MachAlpha [1,8]	☐	☐			30.0	
23	MachAlpha [1,9]	☐	☐			40.0	
24	comma	☐	☐				
25	gamma		☐		−1.7	≤ −1.27026	≤ −1.0
26	tiheat		☑	50000		76879.32	
27	endtime		☐			4614.0	
28	endatito		☐		0.0	≤ 0.0	≤ 1000.0
29	heatit		☐			7.080555	
30	Maxheatit		☑	50		60.33540	≤ 61.0
31	Peakheatit		☐			19.49026	
32	Objective					2.744298	
33	Feasibility					8	
34	Task Process Status					−1.0	≤ 0.0

Doc ID: US 6,125,329 A

FIG. 3B

345

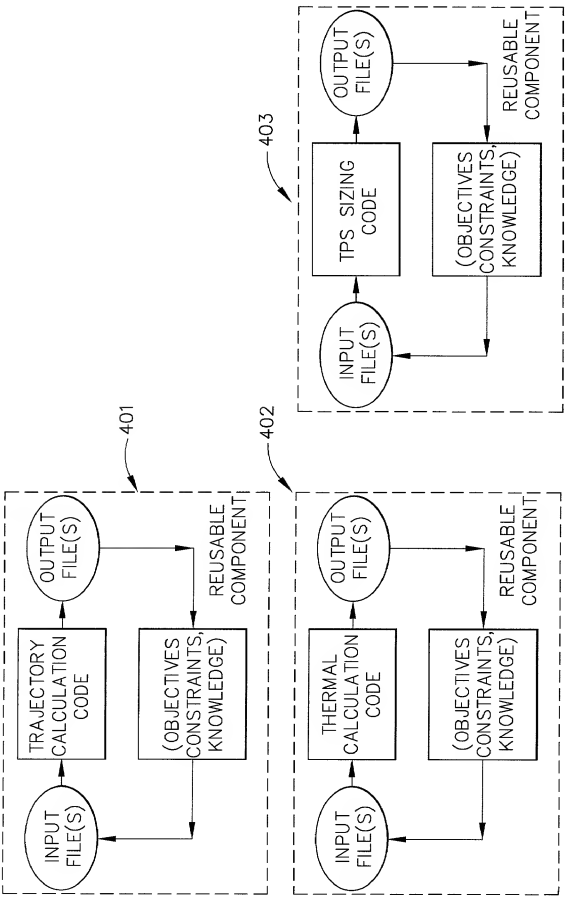

FIG. 4

Top Secret - Confidential

500
501
551
502
552
503
553
INPUT FILE(S)
TRAJECTORY CALCULATION CODE
OUTPUT FILE(S)
(OBJECTIVES CONSTRAINTS, KNOWLEDGE)
REUSABLE COMPONENT
INPUT FILE(S)
THERMAL CALCULATION CODE
OUTPUT FILE(S)
(OBJECTIVES CONSTRAINTS, KNOWLEDGE)
REUSABLE COMPONENT
INPUT FILE(S)
TPS SIZING CODE
OUTPUT FILE(S)
(OBJECTIVES CONSTRAINTS, KNOWLEDGE)
REUSABLE COMPONENT

FIG. 5